

REMARKS

This application has been reviewed in light of the Office Action mailed on December 30, 2003. Claims 1, 8, 9 and 25 are pending in this application. Claim 1 has been amended to define still more clearly what Applicant regards as the invention, in terms that distinguish over the art of record. Favorable reconsideration is requested.

Claim Rejections – 35 U.S.C. § 102

In paragraph 3 in the Office Action the Examiner has incorporated by reference the 35 U.S.C. §§ 102(e) and 103 rejections from the prior Office Action (Paper No. 9). In paragraphs 4 through 9 in the Office Action the Examiner states claim rejection grounds under 35 U.S.C. § 102(e). The following remarks address the rejections in both Office Actions.

In each Office Action, claims 1-6, 8 and 11 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,177,503 (“Araki et al.”) as evidenced U.S. Patent No. 6,191,205 (“Micouin et al.”). Also, in each Office Action, claims 1-3 and 6-9 were rejected under 35 U.S.C. § 102(e) as being anticipated by Micouin et al. Applicant respectfully traverses the rejections and submits that pending independent claim 1 and dependent claims 8, 9 and 25 are patentability distinct from the prior art for at least the following reasons.

The Claimed Invention

Amended claim 1 covers a heavy-vehicle tire comprising a tread which is formed from a cross-linked rubber composition. The composition comprises an elastomeric matrix comprising a functionalized diene elastomer co-polymer formed from a conjugated diene monomer and a vinyl-aromatic compound. The co-polymer has a glass transition temperature of between – 70°C and –20° C and a mass content of vinyl-aromatic units of from 10% to 50%.

The elastomer has at one or more of its chain ends a functional group which is active for coupling to a reinforcing white filler. The functional group is selected from the group consisting of a silanol group and a polysiloxane block having a silanol end.

The composition also comprises a reinforcing filler comprising at least 50% by weight of silica. The silica has a CTAB specific surface area of from 80 m²/g to 260 m²/g. The composition further comprises a reinforcing white filler/functionalized diene elastomer bonding agent.

Claim 8 depends on claim 1 and further specifies that the bonding agent is a polysulphurized alkoxysilane. Claim 9 also depends on claim 1 and provides that the composition further comprises an alkyl alkoxysilane covering agent for the reinforcing white filler. Newly presented claim 25 depends on claim 1 and further provides that the silica is present in the composition in an amount of from 20 phr to 80 phr (parts by weight of the elastomeric matrix).

Applicant's claimed invention is not disclosed in either Araki et al. or Micouin et al.

The Cited Prior Art

Araki et al. discloses a rubber composition comprising a rubber component, silica, carbon black and a silane coupling agent. Araki et al. further describes pneumatic tires, specifically passenger tires, prepared from such a composition. *See*, column 10, line 20. Araki et al. is not directed toward delaying irregular wear in heavy vehicle tire treads.

Araki et al. neither discloses nor suggests the elastomeric matrix that is a component of the cross-linked rubber composition that forms the tread of Applicant's claimed heavy-vehicle tire. Araki et al. makes no mention of an elastomer having at one or more of its chain ends a

functional group being selected from the group consisting of a silanol group and a polysiloxane block having a silanol end. Applicant's functional group is active for coupling to a reinforcing white filler.

The Araki et al. rubber component includes a copolymer rubber. The copolymer rubber is obtained by copolymerization of 1, 3-butadiene and styrene using an organolithium compound as an initiator. *See, e.g.* column 3, lines 32-37. The copolymer rubber may be blended with other diene based rubbers. *Id.* A coupled copolymer is obtained "by treating active lithium at chain ends of a copolymer with a coupling agent containing tin, a coupling agent containing silicon or a coupling agent containing an alkoxysilane, *and coupling the chains of the copolymer.*" Column 5 line 66 to column 6, line 2, emphasis added.

The Araki et al. coupled copolymer is not Applicant's functionalized elastomer which bears one or more groups active for coupling to a reinforcing white filler. Accordingly, Araki et al. does not anticipate Applicant's claims and withdrawal of the §102(e) rejections based on Araki et al. is respectfully requested.

Micouin et al. discloses a silica-base rubber composition intended for the manufacture of tires and to reduce rolling resistance without comprising other desired properties. The rubber element of the Micouin et al. composition is broadly recited as "a base of at least one diene polymer" while the precipitated reinforcing filler is described in specific terms throughout the specification. *See e.g.*, column 2, line 5 to column 9, line 15. The statement at column 8, lines 48-50 that "the diene polymer can be coupled and/or starred or else functionalized with a coupling agent" does not teach or suggest using a diene elastomer having at one or more of its chain ends a functional group consisting of a silanol group or a polysiloxane block having a

silanol end.

Rejection for anticipation or lack of novelty requires, as the first step in the inquiry, that all the elements of the claimed invention be described in a single reference. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Further, the reference must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it. Akzo N.V. v. United States Int'l Trade Comm'n, 808 F.2d 1471, 1479, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986). Clearly, Araki et al., and Micouin et al. do not satisfy these legal criteria of anticipatory prior art, for neither patent includes all the claim elements and neither sufficiently describes Applicant's claimed invention.

Claim Rejections – 35 U.S.C. §103

The Examiner has contended that claims 1-12 are unpatentable under 35 U.S.C. §103 over U.S. Patent No. 5,871,587 ("Vasseur") in view of Araki et al.; that claims 7 and 10 are unpatentable under 35 U.S.C. §103 over Araki et al. as evidenced by Micouin et al. and in view of U.S. Patent No. 5,674,932 ("Agostini et al."); that claims 9 and 12 are unpatentable under §103 over Araki et al. as evidenced by Micouin et al. and in view of U.S. Patent No. 5,989,719 ("Loiselle"); and that claims 4-5 and 10-12 are unpatentable under §103 over Micouin et al. in view of Aaraki et al.

There is No *Prima Facie* Case of Obviousness

The Vasseur, Araki et al., Micouin et al., Agostini et al. and Loiselle patents do not support a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art to modify

the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the combined references must teach or suggest all the claimed limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and must not be based on the applicant's disclosure.

In re Vaeck, 947 F.2d 488, 20 USPQ 2d 1438 (Fed. Cir. 1991); MPEP § 2142.

In this case there is no suggestion or motivation in any of the cited references to combine selective portions of the various patents to arrive at Applicant's invention. As stated on page 1, lines 17-19 of the instant application, the "present invention relates to tires suitable for heavy loads and to the use of a rubber composition in treads for such tires, where such composition leads to a delay in the appearance of irregular wear on the treads during travel."

Vasseur discloses a rubber composition for a crown reinforcement to effect a reduction in rolling resistance. As is well known by those skilled in the art, the crown portion of the tire is located between the carcass and the tread. Moreover, the Vasseur rubber compositions, both those natural rubber compositions specifically disclosed in Tables I and III and those generally described in column 3 line 47 to column 4 line 42, provide no suggestion of Applicant's elastomeric matrix wherein the elastomer bears silanol functional groups or polysiloxane blocks having a silanol end functional group. Nothing in Vasseur or in any of the other cited references suggests employing the Vasseur crown rubber composition in a tread to achieve delayed irregular wear in the tread.

The Examiner has asserted that,

In light of the fact that both Vasseur and Araki have the same kind of diene rubber composition with silica, it would have been obvious to one having ordinary skill in the art to apply Vasseur's cross-linked diene rubber composition for making tread of tire as taught by Araki. Thereby a tire having better performance may be

obtained with such a combination.

It bears repeating that the Araki et al. rubber composition is not Applicant's elastomeric matrix. Neither Araki et al. nor Vasseur suggest Applicant's functionalized diene elastomer. Moreover, the "better performance" to which both patents are directed is decreased rolling resistance, not delayed appearance of irregular wear.

Agostini et al. discloses a silica reinforced rubber composition that has utility in pneumatic tire treads. Examples II and IV describe specific tires made using the Agostini et al. rubber compositions. The tire sizes are 195/65R15, i.e., passenger vehicle tires. The Agostini et al. elastomer is broadly defined. *See e.g.*, Table I, Table IV and claim 14.

The Examiner contends that "as evidenced by Micouin...this [Agostini et al.] composition is useful in making the tread of both passenger tires and heavy-vehicle tires." The Micouin et al. rubber composition is intended for the manufacture of road tires having reduced resistance to rolling. Column 2, lines 5-6. As noted above, Micouin et al. broadly defines a diene polymer that "can be coupled and/or starred or else functionalized." Micouin et al. is not anticipatory art under §102 and nothing in Agostini et al. provides the elements of Applicant's claims that are absent from Micouin et al.

It is legal error to reconstruct Applicant's invention by using the blueprint of Applicant's claims and treating each reference as teaching one or more of the specific claim components. Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1139-44; 227 U.S.P.Q. 543, 547-552 (Fed. Cir. 1985). "It is impermissible to first ascertain factually what [Applicant] *did* and then view the prior art in such a manner as to select from the random facts of that art only those which may be modified and then utilized to reconstruct [Applicant's] invention from such prior art." *Id.*,

774 F.2d at 1141, 227 U.S.P.Q. at 550 quoting In re Shuman, 361 F.2d 1008, 1012, 150 USPQ 54, 57 (CCPA 1966), emphasis original.

It is respectfully submitted that the §103 rejections of Applicant's claims are based on such a hindsight reconstruction of the prior art. Loiselles discloses liquid silicone rubber compositions for use in gaskets and seals, not rubber compositions for use in tire treads. Without the blueprint of Applicant's claims, what basis is there for presuming that a person of ordinary skill in the art would look to Loiselles to fill in the teachings not provided by Araki et al. and Micouin et al.? We submit that there is none.

When prior art references require selective combinations to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577 & n.14, 221 USPQ 929, 933 & n. 14 (Fed. Cir. 1984). "Critical to the analysis is an understanding of the particular results achieved by the new combination." Interconnect Planning Corp., supra, 774 F.2d at 1143, 227 USPQ at 551. The invention of the instant application achieves the particular result of delaying the appearance of irregular wear on the treads of heavy vehicle tires during travel. There is nothing in the cited prior art to suggest that a person seeking to solve this problem would be successful if he or she were to combine selected portions of the cited prior art compositions, many of which were developed to reduce rolling resistance in tires.

Accordingly, Applicants submit that Claim 1 is patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a). The other claims in the present application depend from Claim 1 and therefore are submitted to be patentable for at least the above reasons. Because each dependent claim is also deemed to define an additional

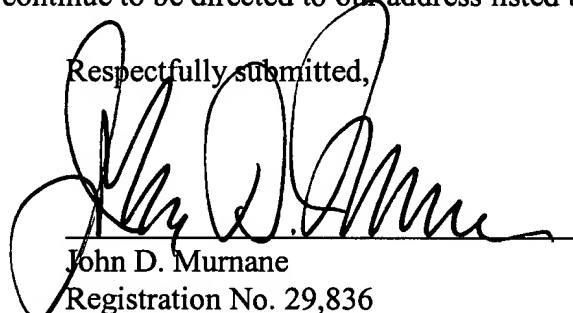
aspect of the invention, individual consideration or reconsideration, as the case may be, of the patentability of each claim on its own merits is respectfully requested.

CONCLUSION

The present Amendment After Final Action is believed clearly to place this application in condition for allowance. Therefore, its entry is believed proper under 37 C.F.R. § 1.116 and is respectfully requested, as an earnest effort to advance prosecution and reduce the number of issues. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicant's undersigned attorney in an effort to resolve such matters and advance the case to issue. In view of the foregoing amendments and remarks, Applicant earnestly solicits favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorneys may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,



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